

The Wireless Bitstream

The Newsletter of the BCS Amateur Radio Special Interest Group

Volume 2 Number 3

July/Aug 1991

Radio On-Line: Radio-Related Sections on Local Telephone BBSs

by Tom McGee, KA1TOX

[Editor's note: Tom McGee, one of the founding members of the BCS Amateur Radio SIG, tells us about Boston-area telephone bulletin-board systems (BBSs) of interest to radio enthusiasts. The phone numbers for all BBSs mentioned in the article are listed at the end.]

When the Boston Computer Society Amateur Radio Group was in its incubation stages, the planning took place over the phone lines on the BCS•MAC BBS. New to ham radio, I was surprised to find that many hams used and ran land-line BBS systems. The telephone BBS, and the hams I met through it, gave me the impetus to actually get my own ham license.

My ticket arrived the same month that I went on-line with my own BBS—called, naturally enough, “Tom’s BBS.” From the start, I wanted Tom’s BBS to include a strong radio focus. Today, the BBS carries:

- the BCS Ham Radio Echo
- the International Echomail areas for Packet Radio and Shortwave Listeners. (the Packet Echo is also carried in the ham section of BCS•MAC.)
- the Ham and Ham-4-Sale UUCP newsgroups, which are moderated gateway conferences between Fidonet and the Internet

The BCS Ham Radio Echo

Back in 1989, the BCS Ham SIG established its home base in a section of the BCS•MAC BBS. In 1990, this grew into a local echo, or network of BBSS, in which messages are exchanged on a daily basis. BCS Ham Radio is now shared between BCS•MAC, Tom’s BBS, Bungalow Cape Cod Gateway, BCS Telecom, and Phototalk. The activity level has varied at different times, but

we would like to establish a core of regular users across the five boards.

Other Radio-Related Echoes

The international echoes carried by Tom’s BBS are very high volume, in terms of the number of messages posted each day. There is often a high “noise level” in the messages, as well. To help “lower the volume,” and to add a perspective on the regional level, new local echoes are being set up, following the example set by the BCS Ham Radio Echo.

“We would like to add more BBSs to the local echoes. If you know of any...send Fido netmail to Tom McGee on node 101/470”

Two new local echo areas have recently been created on Tom’s BBS. As of this writing, they are also carried on Dave’s Opus in the Lowell area. One is called *Boston Area SWL* and was set up to provide a local forum for logging reports. The Boston Area DXers SWL

Editorial: A Good First Step

by Charlie Ross, NC1N

This year’s election for the BCS Board of Directors has been closely watched from a number of quarters. With recent changes in the dues structure, and a decline in overall membership, members have been interested in seeing how the society’s policy decisions are made.

“the secret ballot approach is more appropriate to user and/or hobbyist groups”

In our opinion, the BCS took a good first step by including a proxy ballot in *BCS Update*. Attendance at the annual meeting is difficult for many, and the proxy opened the process up to the membership as a whole.

Yet, as hams, we have seen an even better model: that provided by the American Radio Relay League

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The Wireless Bitstream

Newsletter of
The Boston Computer Society
Amateur Radio
Special Interest Group
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July Meeting Report

by Ron Alpert, KA1UGD

Barry Porter, with a hypercard stack at his side, presented a review of the Internet, a non-commercial, global set of telecommunications networks. The backbone of the system consists of a chain of academic, corporate, and government research institutions with their respective networks. An array of numerous other smaller networks are also tied in.

In 1968, the National Science Foundation's NSFNET, MILNET, and the Department of Defense's DDNET came together as the ARPANET, which stands for the Advanced Research Project Agency Network. This was the inception of the

Important Information about the BCS Ham SIG!

Meeting Time and Directions

The BCS Amateur Radio SIG meets on the first Tuesday of each month at 7:30 PM at MIT Sloan School, Cambridge, MA. Anyone with an interest in amateur radio or shortwave listening (swl) applications for the personal computer is invited and welcome to attend. Directions: Sloan School is at the corner of Wadsworth and Amherst Street. Getting on Memorial Drive from the North, Wadsworth Street is the first right on Memorial Drive. Coming from the South on Memorial Drive, after going under Route 2 (Mass Ave.) Wadsworth is the second left turn. By T, take the Green Line and get off the Cambridge Center/MIT, and walk down Wadsworth Street. There is free parking in the Sloan School Parking Lot.

Use Our BBS

You are encouraged to use the Ham Radio Section on the BCS MAC Multi-line BBS (617) 625-6747 (300-2400 baud). When you call, select "J"ump to other BCS groups from the main menu; then select 1 for the Ham Radio Area. There are three areas: 1) for general messages (local); 2) for the National Packet Echo and 3) for PD/Shareware/Freeware files. Please use the local message area to discuss issues of interest to computer hams and swls or to seek advice and help.

Newsletter Contributions

Individual contributions to the *Wireless Bitstream* are always welcome. In addition, we are currently seeking regular contributors/columnists on all radio-related subjects involving personal computers. Contributions to the newsletter can be made (1) By leaving a message to Charlie Ross on the BCS•MAC BBS (617-625-6747), (2) via Internet at nc1n@jjmhome.m2c.org or (3) by U.S. Mail to Charlie Ross, NC1N, 12 Hemlock Drive, Medway, MA 02053



Internet. It began at MIT and a firm called BBN Systems and was soon an essential tool for remote login to computers (now using the Telnet protocol), file transfer, E-mail, and sharing of information by interest groups. Eventually many local networks sprung from it and also joined it. One example is NEARNET, the New England Area Network, which is a high speed non-profit academic, industrial, and government network. The common denominator for this system is the TCP/IP protocol suite, familiar to regular readers of *The Wireless Bitstream*.

By convention, the word "Internet" with a capital "I" means *the* Internet. Any internetwork running TCP/IP can be called an "internet" with a lower-case "i."

The Internet is not administered by any one group, and thus has the flexibility which many consider vital to the research enterprise. Congress is considering the possibility of privatizing the management of Internet or making it public access. The NSF is opposed to commercial access.

The Internet became operational in 1983. CSNET, a system for computer and engineering researchers, had started in 1981 and joined up. Many others have since established links, including: MIT, Harvard, Compuserve, MCI Mail, Fidonet, ESNET (an energy sciences network), and CREN/CSNET (the computer and science network). CSNET had combined with BITNET forming CREN in Cambridge. Several of these only have gateways for mail exchange. For those with full access, the TCP/IP File Transfer Protocol (FTP) is used to exchange files.

Continued on page 5, July Meeting

group is active in this new message echo. [The Boston Area DXers, also known as the "BAD" guys, is a new short-wave listing group which was started in January this year. We hope to present an article on the group in an upcoming *Wireless Bitstream*.—Ed.] The other new area is called *Boston Scanner Listeners*.

"BCS Ham Radio is now shared between BCS•Mac, Tom's BBS, Bungalow Cape Cod Gateway, BCS Telecom, and Phototalk."

We would like to add more BBS's to the local echoes. If you know of any Greater Boston area sysop who would like to carry these conferences, send Fido netmail to Tom McGee on node 101/470.

The phone numbers for the boards mentioned in this article are:

BCS•Mac	617-625-6747
Tom's BBS	617-471-3009
Bungalow	
(cape cod)	508-883-2400
BCS Telecom	617-786-9788
Phototalk	617-472-8612
Dave's Opus	508-454-3864

"I was surprised to find that many hams used and ran land-line BBS systems"

[Editor's note: *The Wireless Bitstream* would like to compile a list of other area BBSs with one or more radio-related areas. Our readers are requested to contribute names and telephone numbers. Please leave a message for "CHARLIE ROSS" on the BCS Ham Radio Echo, NC1N@WA1PHY.MA on packet, nc1n@nc1n.ampr.org on amateur TCP/IP, or nc1n@jjmhome.m2c.org on the Internet. We'll share the information both here and on packet radio.] ☐☐

Macintosh System 7 Hits Amateur Radio

by Charlie Ross, NC1N

In May, with great fanfare, Apple Computer rolled out System 7.0 for the Macintosh. If you're a Mac user, you're probably either already using System 7.0 or seriously looking forward to getting it. Many of the most popular software applications are being reworked to take advantage of the new features.

Not to be left out, the people who brought you amateur TCP/IP software for the Mac (Dwayne Hendricks, WA8DZP, Doug Thom, N6OYU, et. al.) are rewriting the package "from the ground up" for System 7. Previous versions of the software, called NET/Mac, were based upon a port of the successful, IBM PC-based NET software by Phil Karn, KA9Q. The new package is being designed from scratch for the Mac—it will make use of Communications Tool Box built into the operating system. Reportedly, the new software will offer Appletalk networking over packet radio, while retaining full inter-operability with the wide installed base of KA9Q software.

A paper on the software will be presented at this fall's Computer Networking Conference.

Appletalk at 1200 bps? Isn't that too slow to be practical? Perhaps... but it may provide all the more impetus to upgrade our local networks to higher data rates. In the mean time, we can experiment and dream. Hmm... ham radio Appleshare file servers... Who knows, within a few years, your local Mac-using hams may be just a "double-click" away...

We'll offer a review of the software as it becomes available for distribution. ☐☐

The Hamfest Junkie, Part II

by Fred Lloyd, AA7BQ

[Editor's note: In the last issue, *The Wireless Bitstream* presented the first half of AA7BQ's article on hamfesting—ham radio flea markets. Fred explained how it has become an addiction for him, and that he has learned a lot in the process.

This month, we present the conclusion of the article. Originally written for Usenet, Fred granted permission for it to be reprinted here. If you would like to contact Fred directly, he's available at fred.lloyd@west.sun.com on the Internet.]

More on Pricing

Research your prices beforehand. New gear (less than a year old) typically loses about twenty to thirty percent of its value. Get the AES [Amateur Electronic Supply, a major dealer which advertises nationally—Ed.] catalog—it's the pricing bible for new and late-model gear. Gear that's between two and five years old is typically worth between fifty and seventy percent of its original purchase price. Don't bother consulting those fictional manufacturer's "list" prices, as they're really just hype. Older gear is priced at roughly 30 to 50 percent of what comparable new gear would cost. For example, a Kenwood TS-520 (non-digital) will go for around \$300 while a new TS-140 is about \$750.

"Save all the old vacuum tubes you can get your hands on"

A note about options such as CW filters, PL encode/decode modules, desk microphones, and other add-ons: sadly, they plummet in value much more rapidly than the gear to which they're attached. When the prospective buyer looks at a piece of used gear, the options add only a third of their original value to the price, regardless of age.

There are a few brand names which hold their prices better than

Continued on Page 6, Junkie

FOCUS ON:

The New England TCP Association (NETCPA)

by Rich Vitello, WA1EQU, NETCPA President

[Editor's note: This month, *The Wireless Bitstream* presents the first of a periodic series covering other area ham radio organizations involved in digital aspects of the hobby.

In 1990, *TWB* presented a series of articles on TCP/IP, the "state of the art" in amateur networking protocols. The BCS Ham SIG also held a series of three meetings on the subject, "Starting from Scratch with TCP/IP."

In recent months, the area's "TCPers" have gotten together to form a club dedicated to promoting this new technology. With our group's history of TCP/IP support, it only seems natural that our first article in this new series covers the NETCPA. Rich Vitello offers us a personal account on the group's formation, and its activities since getting started last January.]

The history leading up to the formation of the New England TCP Association is an interesting one. Five years ago there was little in the way of TCP/IP networking support within Amateur radio, and I found the documentation difficult to understand. It became apparent to me that the TCP/IP suite of protocols is extremely powerful—if only people could master all the software and commands! It certainly wasn't for the faint of heart, but for those familiar with commercial TCP/IP networks it was a breeze, as the command structure of TCP/IP on Amateur radio is virtually the same. You can easily do complete file transfers with FTP (the File Transfer Protocol), send electronic mail via SMTP (the simple mail Transfer Protocol), or keyboard-to-keyboard "chats" with the server for Telnet (a terminal protocol).

Birth of The New England TCPer

I found it all but impossible to locate others that were on TCP/IP. There were little "pockets" of activity across the New England area, and no one seemed to know what the other "pockets" were doing. I felt that perhaps the printed word could spread the news about IP—at least until we had enough connectivity to get the TCP/IP "AMPRNET" (Amateur packet radio NETWORK) off the ground. Enter *The New England TCPer* newsletter!

Don Hughes, KA1MF, helped by checking my spelling every month (I typed directly into a \$49⁹⁹ desk top

publisher) and also kept track of the subscription money. [See the September, 1990, issue of *The Wireless Bitstream* for an interview with KA1MF. —Ed.] The newsletter was an instant success, and I received requests for the TCPer, as it's come to be known, from all over New England. In conjunction with the newsletter, I started conducting local NE TCPer "meetings" where amateurs could get together in person and discuss issues, make presentations for TCP/IP, etc. I ran many of these meetings everywhere from high-tech corporate meeting rooms to local barrooms! Things went along fine until when, two and a half years later, I realized it wasn't a one- or two-man operation to handle the writing, editing, distribution and so on for the TCPer. The newsletter went to a bimonthly schedule and acquired a new editor; I remained on board as "Managing Editor."

The NETCPA: Finally, an Organization to Assist

Another two years passed (this brings us to January 1991), and the amprnet grew by leaps and bounds. There were probably a few dozen full-time, 24-hour TCP/IP "nodes" on the air, and many more part-time nodes. One of the local users suggested a meeting of the local "movers and shakers" to help plot a method to distribute some of the work around. The meeting was held two weeks later with about six of the most active IPers. A lot

of brainstorming took place, as well as some solid planning. The most significant result was the formation of The NETCPA. An official kick-off meeting was held in January, which was well-attended by IPers from throughout New England.

We decided the association would set up committees to plan most of the internal functions affecting the TCP network. An executive branch would oversee the entire operation. As of this writing, the following committees have been established: *The Technical Committee* works on issues like improving throughput, increasing network services, developing technical standards, and acting as a problem clearinghouse. *The Software Committee* maintains a liaison with the software developers, encourages local software development, helps new users (and experienced users who run into problems), and has set up standard distribution channels. *The Public Relations Committee* works on promoting TCP/IP, developing funds, creates new user/introductory packages, and helps publicize TCP/IP at local clubs. Finally, the *Newsletter Committee* puts out the TCPer. The committees have representatives from the various local sub-nets (each organized a central "switch" node). Various steps have been taken to assist users—including the designation of an "official" telephone BBS for the distribution of software for those who aren't yet on the air.

What it can mean for you!

The NETCPA will assist hams that are new to TCP/IP and also inform you how to tie into the "amprnet". All we ask for in return is that you join us and help others in the same way. If you think you'd like to give TCP/IP networking a try, please contact us for addition information at the following address:

The New England TCP Association
252 Stow Road
Harvard, Massachusetts 01451

Both voting and nonvoting memberships are available, both of which include subscription to *The New England TCPer*.

NETCPA, Continued on Page 5

June Meeting Report

by Barry Porter

The meeting was called to order at 7:30 PM. Barry made the announcement that the meetings will be held at MIT Sloan School in July, August, October, November and December, and at BCS HQ in September. We all introduced ourselves, and then Barry introduced the speaker and topic for the evening.

The topic was an introduction to Internet and a tour of "The World." The World is a local public access Unix site. Barry Shein, the system operator of The World was introduced. He gave a brief overview what the Internet is. Internet will be explained more thoroughly at next month's HamSIG Meeting.

The World is a large scale time sharing system run on a Sun Microsystems SPARC server with 32 megabytes of memory that runs at 10 MIPS. There are over 3 gigabytes of disk storage. You can communicate to the World with modems that use 19.2K, 9600, 2400 and 1200 baud.

The World offers a vast variety of information services. The most popular is Electronic Mail. Some of the nets that can exchange Email with the World are UUCP, BITNET, CSNET, EUNET (Europe, Soviet Union), JANET (Japan), Fidonet, BIX, Compuserve, Applelink and MCI Mail. Another very popular service offered is Usenet newsgroups. The World carries over 1600 groups which covers almost any topic that 2 people can discuss. World also provides access to Clarinet. Clarinet is an electronic newspaper that draws news from United Press International, Associated Press, private satellite feeds, and a few newspaper related electronic nets including Stock Market news and quotes.

When you are connected to The World you can also access Internet Relay Chat (IRC) and Forumnet, which are international "live" virtual conferences. World users have access to a large chunk of the worldwide "Internet" that supports remote login sessions (Telnet) and file transfers (FTP). World is home to the international "on line book initiative," a publicly accessi-

ble repository for lots of freely distributable information. There are thousands of recipes on line. Poetry, Shakespeare, and many other items are available. There is a complete collection of GNU software which is distributed by the Free Software Foundation. There are also lots of games to play both on line and to download. The staff are VERY helpful if you are a beginner. World is accessible via a modem at 617-739-9753, via voice at 617-739-0202. World is also accessible worldwide via the Compuserve Data Network. It was a very impressive presentation. There are many more features being added.



Continued from page 4, NETCPA

[Editor's note: TCP/IP can be both challenging and fun. It offers a lot of features, but as WA1EQU mentions above, getting started is much easier with help. If you missed last fall's introductory TCP/IP sessions at the BCS Ham SIG, or if you just want to find out about the latest developments (the TCP/IP software for IBM PC-compatibles has a lot of new features), NETCPA would be a good place to turn.]



July Meeting, Continued from Page 2

The NSF Network Services Center (NNSC) provides information, serves a technical internal resource guide, and produces network status reports. The DDN Information Services Center is the vehicle by which the Department of Defense assists persons in using the network. Barry mentioned several books, including *Hitchhiker's Guide to the Internet* by Ed Krol.

Barry also discussed "Usenet," a set of nearly 1000 "news groups" which act like world-wide BBSS. "Usenet" is carried on many Internet hosts, including "The World," a public-access node in Brookline.

With the subject of the Internet being so large, we only touched the surface—but as an introduction, a great deal of ground was covered.



Editorial, Continued from page 1

(ARRL). Although the ARRL's membership is in the hundreds of thousands, elections to the ARRL board include several features not available in the BCS.

In the ARRL, elections are by secret, written ballot. Unlike the BCS, no annual meeting is involved. Each member is mailed a ballot separate from any magazine, and a return envelope is included. We feel the secret ballot approach is more appropriate to user and/or hobbyist groups. The BCS proxy/meeting approach is modeled after corporate shareholder's meetings, and gives less power to individual members. Indeed, the corporate process is usually considered to place heavy favor on incumbency, and thus makes an organization slow to react to change.

In the ARRL, virtually anyone can run for office. Nominations are open, using a petition procedure. In the BCS, however, a nomination committee makes the decisions. A slate is chosen, and only floor action at the annual meeting can change/defeat the slate. Again, this follows a corporate model. However, the nomination committee is not accountable to the membership, and can take whatever actions it chooses. In the recent BCS election, I personally sent a letter of nomination to the committee (suggesting an experienced BCS member for nomination), in response to a solicitation in *BCS Update*. Not only was the person not nominated, I never even received a letter of acknowledgment from the committee!

When running a user group like the BCS, the leadership must demonstrate **credibility and accountability** to the membership. Changing to direct election of the board would make a big improvement on both scores. Admittedly, this would require changes to the BCS bylaws—but the changes would be worth it; the organization would become far stronger. In order for the BCS to thrive, it must become more adaptable and more sensitive to the desires of individual members.

The proxy was a good first step, but more must be taken. We urge our members to make their feelings known.



others. For HF gear, the "Big Three" (Icom, Kenwood and Yaesu) hold their value the best. In used rigs, Collins is the all-time leader in resale value retention—but don't get suckered into paying too much for a Collins, because for the same money you could probably buy a brand-new transistorized (and WARC-capable) rig from one of the big three. Drake has a brisk second-hand market, especially the newer models. In my opinion, the resale values of Swan, Eico, Gonset, most Heathkits, Atlas, Galaxy, and most all-tube rigs (except Collins) don't hold up very well.

In the classic arena, Hallicrafters, Hammarlunds, Johnsons, and Nationals seem to be well-liked. Each brand has a range of models ranging from CB-style cheap to broadcast or mil-spec quality. Prices vary with function, condition, and sentimental value to the current owner.

"As a buyer, never get sentimental or emotionally attached to any item"

When selling new, late-model gear, some buyers may grunt that your price is too high and that with a new one they can get a warranty. I've successfully countered this argument by offering to warrant the unit to the buyer myself. It works! This shows that you're 100% confident in the equipment and that it's worth every penny of your asking price.

Miscellaneous observations about buying and selling

When buying, don't bother with long-time hams who only have one thing to sell. It's usually their dearest old HF rig from the mid-70's. You can bet it's overpriced, and that he really doesn't care if it sells or not. Yes, we know that it's unmodified, that it's been meticulously fed and cared for, that it has the original cartons, manuals and sales receipts, and that he's damned proud of it. But remember: It's still a used rig, worth the prevailing used price plus (at most) 10 percent for being in excellent condition.

If you're a seller and things are moving really fast, and/or people don't seem to be haggling much, then take note—you're underpricing your merchandise. Don't wait until you're almost sold out to realize this. If you have several of the same item, hold a few in reserve for this contingency. If you show a box full of a hundred of the same widget, the seller will offer you less than if you only had one or two on display.

As a buyer, never get sentimental or emotionally attached to any item. This killer attitude can cost you big money. If in doubt, don't buy. Pause, wait, research, and rethink your position first. Don't let the seller know when you are absolutely in love with an item.

"Don't bother consulting those fictional manufacturer's 'list' prices, as they're really just hype"

Find out if the seller is a local ham or not. Local hams are less apt to take advantage of people which might hear them on local repeaters. It's one of the peculiarities of this hobby: people talk. It can help you and it can hurt you. Ham gossip travels at relativistic speeds! If you take advantage of people, or if you misrepresent your wares, you'll soon be *persona non grata* both on the air and around town.

When buying old, tube-type gear, be especially cautious of those which utilize TV sweep tubes in the finals: most of them stink. Even Heathkit used 6146s as the power amplifier tubes (as did Collins), which is a good indicator of a robust design. When many of these rigs were designed, TV sweep tubes were intended to be a more cost-effective solution. Today, sweep tubes cost just about as much as 6146s, so the intended savings is lost. In fact, you'll likely blow two or three sets of sweep tubes before you'll put a dent in a 6146. Just look in an old tube manual (boy, I'm glad I saved mine from the 70's) at the sweep tube ratings. They're junk. Many sweep tube rigs also generate a lot of RFI.

Most home-brew equipment is worth nothing. About the only home-brew device I would buy would be an

antenna tuner—but only if I could see inside it first. Hopefully, it would have a roller inductor.

Used coax is a gamble. There's no telling how long it has weathered. Watch out for "RG-58" cable that says "30 Volts" on it. It's probably thin ethernet which doesn't even come close to being usable. It's probably ok if it is Belden RG-58 A/U type. The black insulation should be shiny.

"Boat Anchors" and Vacuum Tubes

"Boat anchors," like old test equipment, can be a really good buy, if you can pick them up for ten dollars or less. The more knobs and switches the better. Sometimes the cabinets can be worth quite a bit, especially if you're a builder. There's usually about fifty dollars' worth of good, high-quality parts inside these gems. Don't hesitate to scrap what once was a precision piece of test gear—even if it's a name brand like HP or Tektronix. You'll get more for the parts at future hamfests than you paid for the whole unit. Also, your junk box will be well stocked afterwards.

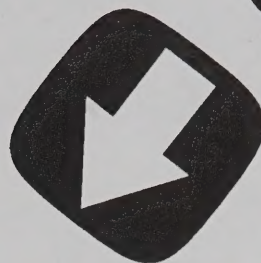
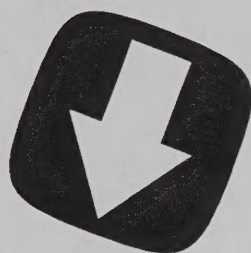
"There are a few brand names which hold their prices better than others...Icom, Kenwood and Yaesu...Collins is the all-time leader in resale value retention"

Save all the old vacuum tubes you can get your hands on. An old HP frequency counter, for example, might have a hundred tubes in it. There are virtually no tube manufacturers left, and these old pulls will soon be in very high demand. I picked up a very good tube tester with charts for two dollars. I have since found it to be indispensable.

Well, that about brings me to the end. I hope that you will find this information useful and/or interesting. The comments and observations given here are my own and your mileage may (will) vary. Have fun, and see you at the next swap meet!



To join The Boston Computer Society...



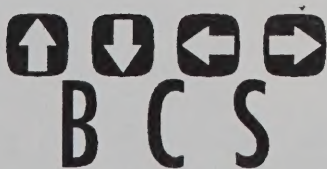
follow
these
simple
directions.

First, complete and return the application.

Second, sit back and relax.

It's that simple. Soon you'll receive *BCS Update* and dozens of other services. You'll have access to the world's largest network of information and support for personal computer users. And your membership includes all of these benefits free of charge.

- Free admission to over 1,000 meetings and special events
- Monthly *BCS Update* magazine
- The BCS newsletter of your choice
- Membership in 51 user and special interest groups
- Use of the BCS Resource Center and Library
- Access to electronic bulletin boards
- Public-domain software
- Telephone support and referrals
- One free admission to The Computer Museum



The Boston Computer Society
One Kendall Square
Cambridge, MA 02139-1562
617-252-0600

The Wireless Bitstream

Membership Application

Please print or type

1

Name

Daytime Telephone

Address

City

State

Zip

2 Please enroll me as a Boston Computer Society Member.

- | | |
|---|--|
| ☐ Regular (1 year), \$39 | ☐ Family, \$49 |
| ☐ Regular (2 year), \$72 | ☐ Outside U.S., \$75 |
| ☐ Regular (3 year), \$105 | ☐ Senior citizen, \$28 |
| ☐ Associate (outside New England only), \$35 | ☐ Student (full time), \$28 |
| | ☐ Sustaining, \$150 |

You'll receive your membership card and first mailings in 4-6 weeks.

Note: The BCS also offers Corporate and Institutional memberships. Call 617-252-0600 for details.

3 Sign me up for these BCS publications.

BCS Update and your choice of one additional publication are included free in BCS membership. Additional BCS publications are \$7 each per year.

BCS Monthly Publications

- ☒ *BCS Update* (with full calendar of events) included free
- ☐ *The Active Window* (Macintosh)
- ☐ *Amiga Culture* (Commodore Amiga)
- ☐ *Artificial Intelligence Newsletter*
- ☐ *PC Report* (IBM PC & Compatibles)
- ☐ *Online Connection* (Telecommunications)

☐ *BCS Professionals Monthly*
This publication will cover the topics listed below, but please indicate your primary interest:

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- ☐ Construction
- ☐ Consultants & Entrepreneurs
- ☐ International
- ☐ Legal
- ☐ Medical/Dental
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☐ *BCS Computer Monthly*
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- ☐ TI Pro
- ☐ TI99/4a

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- ☐ Databases
- ☐ Electronic Mail
- ☐ Programming
- ☐ Robotics
- ☐ Science & Engineering
- ☐ User Interface Design

BCS Bi-Monthly Publications

- ☐ *ApplePress* (Apple II)
- ☐ *Business Reply* (Business & Management)
- ☐ *Impact* (Social Impact)
- ☐ *Lap Gazette* (Laptop Computers)
- ☐ *Look 'n Feel* (Special Needs/Visually Impaired—Blind)
- ☐ *Look 'n Feel* (Special Needs/Visually Impaired—Sighted)
- ☐ *Locus Newsletter*
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- ☐ *New Media News* (Hypermedia/Optical Disk Publishing)
- ☐ *One to Many* (dBASE Language)
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- ☐ *The Schoolhouse Monitor* (Education/Logo)
- ☐ *What's NeXT?* (NeXT)
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- ☐ *The Boston Kugel* (ZITEL—CP/M & MS-DOS)

4 Membership fee (from item 2) = \$ _____

Additional publications (from item 3)
(One plus *BCS Update* are included in your membership)

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Future BCS Amateur Radio SIG Meetings

Mark these in your calendar now!

Help with planning our meetings is still needed. Volunteers are needed.

For latest meeting information, please check *BCS Update* Calendar section. For last minute information, check our Ham Radio Section of the BCS Mac TBBS (617)-625-6747 and packet radio about a week prior to the meeting.

Come at 7PM to meet other members or seek help. Meetings start promptly at 7:30 PM.

Thursday, September 5, 1991

SPECIAL DATE AND PLACE!

The September meeting will be on a THURSDAY this month at BCS HQ, 1 Kendall Square Bldg. 1400, 3d floor. Bring a friend and see the new BCS office space!

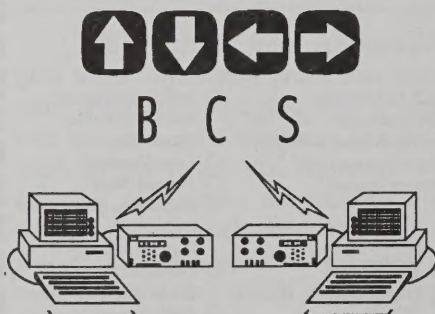
October 1, 1991

Meeting at MIT Sloan School,
Bldg E-51 Room 032

November 5, 1991

Meeting at MIT Sloan School,
Bldg E-51 Room 032

Do you have an idea for a future meeting or want to help organize our programs? Let Ron Alpert, KA1UGD know.



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